UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/533,589	05/03/2005	James A Proctor JR.	27-006-TN	2286

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EXAMINER
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ART UNIT	PAPER NUMBER
2617	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
	10/533,589	PROCTOR ET AL.
Office Action Summary	Examiner	Art Unit	
	MICHAEL T. THIER	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 May 2005*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-47* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13,18-30,35-41 and 45-47* is/are rejected.

7)☒ Claim(s) *14-17,31-34 and 42-44* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 May 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date *5/3/2005*.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____ .

DETAILED ACTION

Information Disclosure Statement

1.   The information disclosure statement (IDS) submitted on 5/3/2005 has been

entered and considered by the examiner.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

3.   Claims 1-6, 10-11, 18-23, 27-28, 35-37, 38-40, and 45 are rejected under 35

U.S.C. 103(a) as being unpatentable over Gainey et al. (US 2004/0157551).

Regarding claims 1 and 18. Gainey teaches a method and apparatus for

detecting the presence of a signal on one of at least two frequency channels in a

frequency translating repeater for use in wireless local area network (WLAN) operating

according to a protocol, (abstract) the apparatus comprising:

a radio frequency interface; (figure 3 item 320 and 321)

a processor; (figure 3 Micro Processor) and

a memory coupled to the processor and the radio frequency interface, (figure 3,

micro processor, further par. 46 explains the processor can be a DSP or other micro

programmable controller, thus having an included memory) the memory containing

instructions for causing the processor to:

establish a first threshold associated with a first of the at least two frequency

channels and a second threshold associated with a second of the at least two frequency

channels; (par. 46 explains different types of detection circuits and states that an

adjustable threshold control can be used for the channels, thus reading on establishing

thresholds for the channels to be monitored.)

monitor the first and second frequency channels to detect the signal thereon in

accordance with a first detection mode including the first threshold and the second

threshold; (par. 44-46, detect if a signal is present on either of the two frequency

channels, and the detection circuit can be an adjustable threshold control, par. 46 also

shows the detection being done by determining if a voltage is above a predetermined

threshold, indicating activity on the channel) and

qualify, if the signal is detected, to determine whether the detected signal is a

wanted signal or an unwanted signal. (par. 44, i.e. determine if the detected signal is a

WLAN signal or noise or some other unwanted signal.)

Regarding claims 2 and 19. The examiner would like to note that the use of

saw tooth controls is well known and widely used in the communications art. Therefore,

the examiner is taking official notice on this limitation (i.e. wherein the instructions

further cause the processor, in establishing the first and the second thresholds, to

establish the first and the second thresholds using a saw tooth process.) The saw tooth

process is a simple and effective technique that would have been obvious to one of

ordinary skill in the art at the time of invention.

Regarding claims 3 and 20. The apparatus according to claim 18, wherein the

instructions further cause the processor to add a delay to the signal after the signal is detected, and wherein a detection bandwidth associated with the monitoring is less than a group delay associated with the signal. (par. 42)

Regarding claims 4 and 21. Gainey teaches apparatus according to claim 20 he does not specifically disclose that the delay is less than a timeout parameter associated with the protocol. However, timeouts are well known and widely used in the wireless communications art. Having the delay be less than a timeout parameter would have been obvious to one of ordinary skill in the art at the time of invention. The examiner is taking official notice on this feature.

Regarding claims 5 and 22. Gainey further teaches wherein the instructions further cause the processor to refine the first threshold and the second threshold if no signal is detected. (par. 46, i.e. adjustable threshold controls)

Regarding claims 6 and 23. Gainey further teaches wherein the first detection mode includes an analog detection mode, not involving the processor directly. (par. 37 and figure 3 items 370-371, further par. 44)

Regarding claims 10 and 27. Gainey further teaches wherein the instructions further cause the processor to monitor the first and second frequency channels to detect a signal thereon in accordance with a second detection mode including the first threshold and the second threshold when the detected signal is detected. (par. 46, the first mode is the analog detection explained in par. 44, the second mode is the microprocessor performing the determining explained in par. 46)

Regarding claims 11 and 28. Gainey further teaches wherein the second

detection mode includes a digital detection mode. (par. 46, DSP or micro processor

performs detection, thus being digital)

Regarding claims 12 and 29. Gainey further teaches wherein the instructions

further cause the processor to override the first detection mode with a second detection

mode. (par. 46, the first mode is the analog detection explained in par. 44, the second

mode is the microprocessor performing the determining explained in par. 46, DSP or

micro processor performs detection, thus being done after the first detection mode, i.e.

overriding)

Regarding claim 35. Gainey further teaches an IF unit, capable of down-

converting the signal on an RF band and selecting one of the first and the second

frequency channels for transmission. (figure 3 items 335, 350)

Regarding claim 36. Gainey further teaches wherein the IF unit is configured to

filter the down converted signal. (figure 3 item 335)

Regarding claim 37. Gainey further teaches wherein the IF unit is configured to

add a delay to the down converted signal during a period the signal is not detected and

prior to enabling a transmission. (see figure 3 items 360-361, which come after the

signal is detected and delay the signal prior to transmission)

Regarding claim 38. Gainey further teaches a detection unit associated with

each of the at least two frequency channels. (figure 3, Detection and Control Unit)

Regarding claim 39. Gainey further teaches wherein the detection unit includes

at least one of: a diode detector at an intermediate frequency (IF), a diode detector at a

base band frequency, a matched filter at the IF, a matched filter at a radio frequency

(RF). (figure 3 items 370 and 371)

Regarding claim 40. Gainey further teaches a converter to digitize the signal to form a digitized signal and wherein the detector unit is further configured to detect the digitized signal. (figure 3 items 380 and 381)

Regarding claim 45. The examiner would like to note that the use of a saw filter is well known and widely used in the communications art. Therefore, the examiner is taking official notice on this limitation (i.e. using a saw filter and adding a delay with the saw filter.) The idea of using a saw filter is a simple and effective technique that would have been obvious to one of ordinary skill in the art at the time of invention.

4.   Claims 7-9, 24-26, 41 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gainey et al. (US 2004/0157551) in view of Lusky et al. (US 7315573).

Regarding claims 7 and 24. Gainey teaches the limitations of the previous claim.

However, he does not specifically disclose the idea of causing the processor to record information associated with the detected signal in an event log if the detected signal is determined to be the unwanted signal.

Lusky teaches a system and method for monitoring channels (title and abstract). He disclose the idea of recording information if the signal is an unwanted signal in column 5 lines 44-47. He explains the idea of monitoring and recording any noise. (i.e. noise is an unwanted signal)

Therefore it would have been obvious for one of ordinary skill in the art at the

time of invention to utilize the teachings of Lusky with the teachings of Gainey. The

motivation for doing so would have been to allow for a system that can analyze channel

impairments and determine optimal parameters. (Lusky column 2 lines 65-67)

Regarding claims 8 and 25. Gainey further teaches wherein the instructions

further cause the processor to disable a transmission of the signal over the radio

frequency interface if the detected signal is determined to be the unwanted signal. (par.

44, detect if the signal is WLAN or noise or some unwanted signal, the system will not

repeat a signal that is detects as noise)

Regarding claims 9 and 26. Gainey further teaches wherein the instructions

further cause the processor to refine the first and the second threshold using the

recorded information. (par. 46, the adjustable threshold controls allows for this limitation

to be understood from the Gainey reference.)

Regarding claim 41. Lusky further teaches wherein the detection unit is further

configured to: compare a power level associated with the signal; monitor the signal over

a time interval to determine a noise estimate; and comparing the current signal power to

this estimate as part of the detection process. (column 6 lines 52 to column 7 line 7)

Regarding claim 46. Gainey further teaches wherein the detection unit is further

configured to monitor the at least two frequency channels at the same time. (par.44)

Lusky teaches detecting noise in operating channels column 5 lines 44-47. The

combination reads on the limitaions of this claim.

5.   Claims 13 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Gainey et al. (US 2004/0157551) in view of Leslie et al. (US 6404755).

Regarding claims 13 and 30. Gainey teaches the limitations of the previous

claim.

However, he does not specifically disclose starting a timer to measure an

elapsed time associated with the detected signal if the detected signal is determined to

be the wanted signal; and enabling a transmission of the detected signal in accordance

with an override mode.

Leslie teaches this limitation in column 26 lines 15-26. (i.e. setting a timer when

the signal is received and enabling transmission of the detected signal in accordance

with an override mode)

Therefore it would have been obvious for one of ordinary skill in the art at the

time of invention to utilize the teachings as in Leslie with the teachings as in Gainey.

The motivation for doing so would have been to allow for a system that can efficiently

retransmit received signals.

6.   Claim 47 is rejected under 35 U.S.C. 103(a) as being unpatentable over the

grounds of rejection as applied to claim 41 in further view of Irving et al. (US 6163276).

Regarding claim 47. Gainey and Lusky teach the limitations of the previous

claim 41.

However, they do not teach the idea of the converter being under sampled to

monitor noise.

Irving teaches this limitation in column 4 lines 43-55.

Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to utilize the teachings as in Irving with the teachings as in Gainey and Lusky. The motivation for doing so would have been to provide a simple and cost effective way of detecting the noise in a received signal.

Allowable Subject Matter

7.   Claims 14-17, 31-34, and 42-44 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL T. THIER whose telephone number is (571) 272-2832. The examiner can normally be reached on Monday thru Friday 7:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duc Nguyen can be reached on (571) 272-7503. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

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For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. T. T./
Examiner, Art Unit 2617
3/19/2008

/Duc Nguyen/
Supervisory Patent Examiner, Art Unit 2617